

# Successful Cobra pilot leads to numerous benefits for Northamptonshire Fire and Rescue Service

Cobra is a high-pressure water jet and abrasive system, which has the capability to pierce small holes through doors or walls, then rapidly deliver a fine mist of atomised water into a fire compartment or building from the outside. As part of a continual process of reviewing its risk, incidents and associated activities, in 2008 Northamptonshire Fire and Rescue Service (NFRS) identified the Cobra System as a potential solution to improving firefighter safety, enhancing operational response and reducing the environmental impact resulting from fire-related incidents. CFO Martyn Emberson took the strategic decision then to instigate a pilot study with the Cobra system fitted to three new fire appliances.

Brigade Manager Adrian Davis strategically managed the study for NFRS, with tactical implementation responsibilities managed by Phil Pells (Ops Manager) and research, development and training delivery carried out by Dan Moore (Special Operations – Cobra).

## Fire suppression

The micro droplets produced by the Cobra lance are capable of great heat absorption and quickly suppress fire and cool temperatures before more conventional techniques are deployed. This capability removes the need for firefighters to open up a compartment or make an initial entry until conditions have improved. By having this positive effect on the conditions within a room or building before committing BA wearers, the risk exposure to fire behaviour events such as flashovers, backdraughts and fire gas explosions can be substantially reduced or removed.

**“One of the biggest advancements in firefighter safety since the introduction of BA.”**

**CFO Martyn Emberson,  
Northamptonshire Fire & Rescue Service**

By challenging the conventional ways of tackling property fires, ongoing research and development has allowed NFRS to incorporate this new technology with advanced tactical ventilation techniques and a much greater use of thermal image technology by the Incident Commander. From this position, a completely new ‘Cobra Extinguishing Concept’ has been developed producing numerous operational, economic and environmental benefits to NFRS and the communities within Northamptonshire. These include improved firefighter safety and enhanced operational response.

The environmental impact resulting from fire incidents has also been substantially reduced in several areas, says the brigade. The ability to have an earlier intervention using Cobra reduces property damage, minimising the economic impact to an



Standard appliance Cobra stowage.

individual, business or community and limits the quantities of fire gas emissions into the atmosphere. The reduced quantities of water used by the Cobra system ensure contaminated water runoff from an incident is also limited.

## Partnership approach

As the UK lead in the development of this Cobra Extinguishing Concept, NFRS took a proactive approach and became the UK partner in the European Union FIREFIGHT II Project (EU FF II), funded by the Leonardo Da Vinci Lifelong Learning Programme. The FIREFIGHT II Project has been designed to modernise policy, methodology and approach, establishing supplementary training in strategy and tactics for intervention team leaders and Incident Commanders using the Cobra Extinguishing Concept.

The NFRS EU FF II Project team, consisting of Phil Pells, Dan Moore and Terry Blissett, has been able to carry out extensive research and development with other project partners from Sweden, Spain, The Czech Republic, Finland, France and Estonia, to develop worldwide

e-learning to promote the outcomes of the project.

Out of a fleet of 28 standard fire appliances, Northamptonshire Fire and Rescue Service now has 12 fitted with Cobra, and as part of its vehicle replacement programme, Cobra will now be a standard fit on all future new NFRS fire appliances.

In 2010, NFRS instigated a successful pilot using a smaller Initial Intervention Vehicle fitted with Cobra. This vehicle is crewed by two firefighters and



(From L to R) Northamptonshire FRS's Dan Moore, Terry Blissett, CFO Martyn Emberson and Phil Pells.



A fire in a high bay warehouse at Catalent Pharma Solutions in Corby, Northamptonshire, was the first time multiple Cobra units have been deployed to fight fire in the UK.



Cobra Intervention Vehicle.

is deployed to maintain fire cover in areas where availability of RDS personnel is limited. The success of this pilot has resulted in the permanent provision of this Initial Intervention Vehicle, with a second generation of smaller appliance now being designed and developed.

**Versatility**

Due to the versatility of the system, NFRS now use Cobra at a broad range of incident types including ventilated or unventilated property fires, high-rise, basement and underground fires, vehicle fires, silos, thatch fires, hidden and difficult access fires, trees, ducting and ventilation fires.

CFO Martyn Emberson said, "It is my opinion that the introduction of Cobra in Northamptonshire delivers one of the biggest advancements in firefighter safety since the introduction of breathing apparatus."

André González De Savage, Northamptonshire County Council Cabinet Member with responsibility for the fire and rescue service, said, "This leading edge technology in fighting fires with immediate positive results is outstanding in its versatility and has demonstrated to communities just how rapidly a fire can be extinguished safely. The damage to a community is therefore greatly reduced and the recovery and rebuild is faster and less costly. The Cobra system is a very reassuring and innovative resource and an invaluable piece of equipment that no fire service should be without."

**Multiple units deployed**

On 24 March 2011 NFRS attended a fire in a high bay warehouse at Catalent Pharma Solutions in Corby, Northamptonshire. Catalent develops, manufactures and provides packaging services for pharmaceutical, biotechnology and consumer health

companies. As part of the fire fighting tactics, five Cobra units were deployed to maintain the integrity of the internal walls and contain the fire within the area of ignition.

Approximately 80 percent of the building was saved, along with considerable quantities of high value stock and bespoke machinery. This was the first time multiple Cobra units have been deployed to fight fire in the UK.

Brigade Manager Adrian Davis attended this incident. He said, "The Catalent incident had the potential to be a very protracted one. It involved a significant fire in a high bay warehouse of sandwich panel construction with a high fire loading. I have no doubt in my mind that the fire fighting tactics deployed on the day of multiple Cobra units and PPV attack were the major factor that enabled 80 percent of the building and contents to be saved."

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